WHAT IS CLAIMED IS:

1. A holding apparatus for a sheet member which has a density c and a thickness t, the apparatus comprising:

(a) a rotary body having a radius r and an outer peripheral surface around which the sheet member can be wound, a coefficient of friction between the sheet member and the outer peripheral surface being μ_2;

(b) a support attached to the outer peripheral surface of said rotary body; and

(c) an arm comprising two end portions and an arm portion supported by said support between said two end portions, said arm having a weight m per unit length in an axial direction of said rotary body, said arm being pivotable about a fulcrum at said arm portion, said arm having a clamp section provided at one of said end portions at a distance L_1 from the fulcrum for applying pressure to the sheet member, which is disposed between said one end portion and the outer peripheral surface of said rotary body, a coefficient of friction between said clamp section and the sheet member being μ_1, and said arm having a center of gravity at a position between other of said end portions and the fulcrum at a distance L_2 from the fulcrum,

wherein the expression $(\mu_1 + \mu_2)\, m\, (L_2/L_1) > crt$ is satisfied.

2. The holding apparatus according to claim 1, further comprising a resiliently deformable element connected to said other end portion of said arm, wherein, when said support is attached to said rotary body, said element is resiliently deformed such that force is applied to

said other end portion of said arm, said one end portion of said arm is pivoted toward the outer peripheral surface of said rotary body, and pressure on the sheet member is generated.

3. The holding apparatus according to claim 1, wherein, when said rotary body is rotated, centrifugal force acting at said arm acts to increase the pressure on the sheet member.

4. The holding apparatus according to claim 1, wherein said rotary body includes at least one groove formed along the outer peripheral surface of said rotary body, and said support is attachable to and detachable from said rotary body via the groove.

5. The holding apparatus according to claim 4, wherein the groove has a base portion and an opening portion, the opening portion being formed at the outer peripheral surface of said rotary body, and has a substantially trapezoid section such that width of the opening portion is smaller than width of the base portion.

6. The holding apparatus according to claim 1, wherein said rotary body includes at least one groove formed along the outer peripheral surface of said rotary body, and said support is disposed at a desired position of the outer peripheral surface of said rotary body via the groove.

7. The holding apparatus according to claim 6, wherein the groove has a base portion and an opening portion, the opening portion being formed at the outer peripheral surface of said rotary body, and has a substantially trapezoid section such that width of the opening portion is smaller than width of the base portion.

8. A holding apparatus for a sheet member which has a density c and a thickness t, the apparatus comprising:

(a) a rotary body having a radius r and an outer peripheral surface around which the sheet member can be wound, a coefficient of maximum rest friction between the sheet member and the outer peripheral surface being μ_2;

(b) a support attached to the outer peripheral surface of said rotary body;

(c) an arm comprising two end portions and an arm portion supported by said support between said two end portions, said arm having a weight m per unit length in an axial direction of said rotary body, said arm being pivotable about a fulcrum at said arm portion, said arm having a clamp section provided at one of said end portions at a distance L_1 from the fulcrum for applying pressure to the sheet member, which is disposed between said one end portion and the outer peripheral surface of said rotary body, a coefficient of maximum rest friction between said clamp section and the sheet member being μ_1, and said arm having a center of gravity at a position between other of said end portions and the fulcrum at a distance L_2 from the fulcrum and a distance αr from the

center of said rotary body; and

(d) a resiliently deformable element connected to said other end portion of said arm and which, when said support is attached to said rotary body, is resiliently deformed such that a pressure force T_0 is applied at a pressure application point at said other end portion at a distance L_3 from the fulcrum, said one end portion is pivoted toward the outer peripheral surface of said rotary body, and pressure on the sheet member is generated,

wherein a tensioning force F acts to move the sheet member along a stretching direction along the outer peripheral surface of said rotary body, and the expression $\mu_1\{(L_2/L_1)m\alpha r\omega^2 + (L_3/L_1)T_0\} > F > cr^2t\omega^2 + \mu_2\{(L_2/L_1)m\alpha r\omega^2 + (L_3/L_1)T_0\}$ is satisfied, ω being angular velocity.

9. The holding apparatus according to claim 8, wherein said clamp section is movable in the stretching direction of the sheet member.

10. The holding apparatus according to claim 9, further comprising a tensioning element provided at said other end portion of said arm and operably connected to said clamp section, said tensioning element being operable by centrifugal force for applying tension to the clamp section during rotation of said rotary body.

11. The holding apparatus according to claim 8, wherein k is a coefficient relating to mass, F equals $kr\omega^2$, T_0 is 0, and the expression $\mu_1(L_2/L_1)m\alpha > k > crt + \mu_2(L_2/L_1)m\alpha$ is satisfied.

12. The holding apparatus according to claim 8, wherein, when said rotary body is rotated, centrifugal force acting at said arm acts to increase the pressure on the sheet member.

13. The holding apparatus according to claim 8, wherein said rotary body includes at least one groove formed along the outer peripheral surface of said rotary body, and said support is attachable to and detachable from said rotary body via the groove.

14. The holding apparatus according to claim 13, wherein the groove has a base portion and an opening portion, the opening portion being formed at the outer peripheral surface of said rotary body, and has a substantially trapezoid section such that width of the opening portion is smaller than width of the base portion.

15. The holding apparatus according to claim 8, wherein said rotary body includes at least one groove formed along the outer peripheral surface of said rotary body, and said support is disposed at a desired position of the outer peripheral surface of said rotary body via the groove.

16. The holding apparatus according to claim 15, wherein the groove has a base portion and an opening portion, the opening portion being formed at the outer peripheral surface of said rotary body, and has

a substantially trapezoid section such that width of the opening portion is smaller than width of the base portion.